1. A semiconductor memory device comprising:

a nonvolatile memory that consists of a plurality of

5   sectors, a certain number of continuous sectors of which

are grouped as a block of a minimum unit for data erase,

and writes or reads data transmitted from an external

access device;

a memory controller for controlling erase, writing

10 and reading of data to said nonvolatile memory when a

command containing a control signal is input from said

access device;

a device information storage part for storing device

information concerning physical properties of the

15 semiconductor memory device containing erase block size of

said nonvolatile memory; and

a file system interface controller for performing

file access processing to said nonvolatile memory on the

basis of the device information stored in said device

20 information storage part.

2. The semiconductor memory device according to claim

1, wherein

said file system interface controller manages data

25 stored in said nonvolatile memory as a file and when a

command to request file access processing to a file on said

nonvolatile memory is input from said access device,

performs file access processing to a file existing in said

nonvolatile memory.

5

     3. The semiconductor memory device according to claim

1, wherein

     said nonvolatile memory has a first area and a second

area,

10   said file system interface controller manages data

stored in said first area as a file and when a command to

request file access processing to a file in said first area

of said nonvolatile memory is input from said access device,

performs file access processing to a file existing in said

15 first area of said nonvolatile memory,

     said semiconductor memory device further comprises:

     a low-level IO interface controller for performing

writing or reading processing of the data to said second

area of said nonvolatile memory, when a command to request

20 writing or reading processing of the data to said second

area of said nonvolatile memory is input from said access

device for controlling file systems.

     4. The semiconductor memory device according to claim

25 1, further comprises:

78

a low-level IO interface controller for performing

writing or reading processing of data to an arbitrary

position in said nonvolatile memory, when a command to

request writing or reading processing of data to an

5   arbitrary position of said nonvolatile memory is input from

said access device for controlling file systems,

wherein said nonvolatile memory has a common area

controlled by both of said file system interface controller

and said low-level IO interface controller;

10   said file system interface controller performs only

format processing of constructing file system so that an

access unit may be an optimum access unit on the basis of

device information stored in said device information

storage part to the common area on said nonvolatile memory;

15   and

file access processing other than the format

processing to a file existing in the common area on said

nonvolatile memory is executed by said low-level IO

interface controller on the basis of the command input from

20   said access device.

5. The semiconductor memory device according to claim

1, wherein

when a command to request read-only file access

25   processing to a file on said nonvolatile memory is input

from said access device, said file system interface

controller performs file access processing to a file

existing in said nonvolatile memory,

said semiconductor memory device further comprises:

5   a low-level IO interface controller for performing

writing or reading processing of data at the arbitrary

position in said nonvolatile memory, when a command to

request writing or reading processing of data at an

arbitrary position in the area in said nonvolatile memory

10   that said file system interface controller for data reading

is input from said access device that controls the file

system; and

a synchronization controller for updating file system

management information read in a temporary storage memory

15   in said semiconductor memory device by said file system

interface controller so as not to cause inconsistency, when

said low-level IO interface controller performs data

writing processing to management information of the file

system existing in said nonvolatile memory.

20

6. The semiconductor memory device according to claim

1, wherein

said device information storage part stores

information on physical properties of the semiconductor

25   memory device including erase block size of said

nonvolatile memory and device information including a file

system type flag representing a type of the file system

built on the nonvolatile memory,

said file system interface controller consists of a

5   plurality of file system interface controllers for managing

data stored in said nonvolatile memory on the basis of

device information stored in said device information

storage part and for performing file access processing to a

file on the nonvolatile memory according to a command input

10   from said access device, and

said file system interface controller corresponding

to said file system type flag among said plurality of file

system interface controllers operates on said semiconductor

memory device.

15

7. The semiconductor memory device according to claim

1, wherein

said file system interface controller determines an

access unit to optimally access to said nonvolatile memory

20   on the basis of information containing erase block size

stored in said device information storage part, and sets

the size of a management information area of a file system

as a length of multiples of the optimum access unit when

performing format processing of building the file system in

25   an area of said nonvolatile memory.

8. The semiconductor memory device according to claim 1, wherein

said file system interface controller determines an
5 optimum access unit to optimally access to said nonvolatile memory on the basis of information containing erase block side stored in said device information storage part, and uses said optimum access unit as an area allocation unit when recording file data to said semiconductor memory
10 device.

9. The semiconductor memory device according to claim 1, wherein

said file system interface controller determines the
15 optimum access unit to optimally access to said nonvolatile memory on the basis of information containing erase block size stored in said device information storage part, and allocates directory areas so that a plurality of directory areas are included in the same said optimum access unit.
20

10. The semiconductor memory device according to claim 1, wherein

said file system interface controller is composed of a program stored in a memory as a nonvolatile updatable
25 recording medium, and

said file system interface controller can be replaced, updated or deleted from the outside of said semiconductor memory device.

5   11. A control method of a semiconductor memory device having a nonvolatile memory that consists of a plurality of sectors, and that a certain number of continuous sectors of which are grouped as a block of a minimum unit for data erase, comprising steps of:

10   storing device information in advance on physical properties of the semiconductor memory device containing erase block size of said nonvolatile memory in a device information storage part;

accepting a command containing a control signal from

15   an external access device;

performing file access processing to said nonvolatile memory on the basis of the device information stored in said device information storage part by the file system interface controller; and

20   performing erase, writing and reading of data to said nonvolatile memory on the basis of the accepted command.

12. The control method of the semiconductor memory device according to claim 11, comprising steps of:

25   managing data stored in said nonvolatile memory as a

file by said file system interface controller; and

performing file access processing to a file existing in said nonvolatile memory, when a command to request file access processing to a file on said nonvolatile memory is
5   input from said access device.

13. The control method of the semiconductor memory device according to claim 11, comprising steps of:

determining an access unit to optimally access to
10   said nonvolatile memory on the basis of information containing erase block size stored in said device information storage part by said file system interface controller; and

setting the size of a management information area of
15   a file system as a length of multiples of the optimum access unit when performing format processing of building the file system in an area of said nonvolatile memory.

14. The control method of the semiconductor memory
20   device according to claim 11, comprising steps of:

determining an optimum access unit to optimally access to said nonvolatile memory on the basis of information containing erase block side stored in said device information storage part by said file system
25   interface controller; and

84

using said optimum access unit as an area allocation unit when recording file data to said semiconductor memory device.

5   15. The control method of the semiconductor memory device according to claim 11, comprising steps of:

determining the optimum access unit to optimally access to said nonvolatile memory on the basis of information containing erase block size stored in said

10   device information storage part by said file system interface controller; and

allocating directory areas so that a plurality of directory areas are included in the same said optimum access unit.